

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An optical information storage medium ~~(1)~~ comprising:
- a carrier substrate ~~(5)~~,;
  - a reflective information layer ~~(10)~~ being positioned on the carrier substrate ~~(5)~~ and comprising at least a first layer ~~(11)~~ of a first inorganic material in a first structural phase, and at least a second layer ~~(12)~~ of at least a second inorganic material in at least a second structural phase,; and
  - alloy inclusions ~~(6)~~ being formed in the information layer ~~(10)~~ upon exposure to a first electromagnetic radiation and having a ~~microstructure structural phase~~ comprising a mixture of the first material in the first structural phase and the at least second material in the at least second structural phase,
- wherein the optical properties of the alloy inclusions are different from the optical properties of the as-deposited information layer so that a modulation in electromagnetic radiation reflected from the alloy inclusions and from an area comprising the as-deposited information layer, respectively, is provided in response to a second electromagnetic radiation being emitted towards the optical information storage medium ~~(1)~~ to provide a read-out signal,.
- characterized in that the storage medium further comprises

at least one additional layer (4) positioned between the carrier substrate and the at least first layer (11), the at least one additional layer (4) comprising at least one sub-layer being a metal.

2. (Currently Amended) A~~The optical information storage medium according to~~as claimed in claim 1, wherein the inorganic materials at least comprises materials being selected from the group consisting of the pairs: As-Pb, Bi-Cd, Bi-Co, Bi-In, Bi-Pb, Bi-Sn, Bi-Zn, Cd-In, Cd-Pb, Cd-Sb, Cd-Sn, Cd-Ti, Cd-Zn, Ga-In, Ga-Mg, Ga-Sn, Ga-Zn, In-Sn, In-Zn, Mg-Pb, Mg-Sn, Mg-Ti, Pb-Pd, Pb-Pt, Pb-Sb, Sb-Sn, Sb-Ti, Se-Ti, Sn-Ti, and Sn-Zn.

3. (Currently Amended) A~~The optical information storage medium according to~~as claimed in claim 1, wherein the inorganic materials at least comprises materials being selected from the group consisting of the pairs: Bi-Co, Bi-In, Bi-Pb, Bi-Sn, Bi-Zn, Ga-In, Ga-Sn, In-Sn, In-Zn, Mg-Sn, Sb-Sn, Sn-Ti, and Sn-Zn.

4. (Currently Amended) The optical information storage~~A~~ medium according to~~as claimed in~~ claim 1, wherein the inorganic materials at least comprises the combination of Bi-In, Bi-Sn, In-Sn.

5. (Currently Amended) The optical information storage~~A~~ medium according to~~as claimed in~~ claim 1, wherein each inorganic material has a complex refractive index  $n \pm ik$  and wherein the second

inorganic material is selected to have a real part of the refractive index lower than the real part of the refractive index of the first material and an imaginary part of the refractive index higher than the imaginary part of the refractive index of the first material.

6. (Currently Amended) The optical information storageA medium ~~according to as claimed in~~ claim 1 wherein the first inorganic material forming the first layer ~~(11)~~ is Bi and the second inorganic material forming the second layer ~~(12)~~ is In or Sn, or wherein the first inorganic material is Sn and the second inorganic material is In.

7. (Currently Amended) The optical information storageA medium ~~according to as claimed in~~ claim 1, wherein the thickness of the first and second layers ~~(11, 12)~~ are selected so that an alloy formed by melting and solidifying of at least a part of the first and second layers has a substantially eutectic composition.

8. (Cancelled).

9. (Currently Amended) The optical information storageA medium ~~according to as claimed in~~ claim 8~~1~~, wherein the alloy ~~(6)~~ or the as-deposited information layer ~~(10)~~ are substantially transparent to the second electromagnetic radiation emitted towards the medium.

10. (Currently Amended) The optical information storageA medium ~~according to~~as claimed in claim 9, wherein the at least one additional layer (4) is adapted to reflect, absorb or diffuse the second electromagnetic radiation being emitted towards the additional layer.

11. (Currently Amended) The optical information storageA medium ~~according to~~as claimed in claim 89, wherein the at least one additional layer (4) comprises at least one sub-layer comprising a dielectric material.

12. (Cancelled).

13. (Currently Amended) The optical information storageA medium ~~according to~~as claimed in claim 89, wherein the at least one additional layer (4) comprises at least one transparent spacer layer.

14. (Currently Amended) The optical information storageA medium ~~according to~~as claimed in claim 1, wherein the medium further comprises a protective cover layer (3).

15. (Currently Amended) The optical information storageA medium ~~according to~~as claimed in claim 1, wherein the modulation in reflected electromagnetic radiation between an area comprising the

alloy and an area comprising the as-deposited layer is larger than 70%.

16. (Currently Amended) The optical information storageA medium ~~according to~~as claimed in claim 1, wherein the modulation is an intensity modulation or a phase modulation.

17. (Currently Amended) The optical information storageA medium ~~according to~~as claimed in claim 1 wherein the medium is compatible with CD and DVD standards.

18. (Currently Amended) The use of a medium ~~according to~~as claimed in claim 1 in an optical information reading and/or recording device.

19. (Currently Amended) An optical storage information medium comprising:

- a carrier substrate~~(5)~~,
- a first recording stack comprising
  - a reflective information layer ~~(10)~~ comprising at least a first layer ~~(11)~~ of a first inorganic material in a first structural phase, and at least a second layer ~~(12)~~ of at least a second inorganic material in at least a second structural phase, and at least one additional layer positioned between the carrier substrate and the at least first layer, the at least one additional layer comprising at least one sub-layer being a metal.

- alloy inclusions ~~(6)~~ being formed in the information layer ~~(10)~~ and having a ~~microstructure~~ structural phase comprising a mixture of the first material in the first structural phase and the at least second material in the at least second structural phase,
- a separation layer,
- a second recording stack substantial identical to the first recording stack.

20. (Currently Amended) A method for manufacturing an optical information storage medium ~~(1)~~, the method comprising the steps of:

- providing a carrier substrate ~~(5)~~,
- providing a reflective information layer ~~(10)~~ by depositing at least a first layer ~~(11)~~ of a first inorganic material in a first structural phase on the carrier substrate, and depositing at least a second layer ~~(12)~~ of at least a second inorganic material in a second structural phase on the first layer, providing at least one additional layer positioned between the carrier substrate and the at least first layer, the at least one additional layer comprising at least one sub-layer being a metal,
- the at least first and second inorganic materials being selected so that a ~~microstructure~~ structural phase being formed by melting and solidification of at least a part of the information layer provides alloy inclusions ~~(6)~~ having a ~~microstructure~~ structural phase comprising a mixture of the first material in the

first structural phase and the second material in the second structural phase.

21. (Currently Amended) ~~The~~A method ~~according to~~as claimed in claim 20, further comprising the step of exposing in a predetermined pattern the information layer to a first electromagnetic radiation so as to form alloy inclusions in the exposed information layer.

22. (Currently Amended) An optical information storage medium being provided by the method ~~of~~as claimed in claim 20.

23. (Currently Amended) A method for optically reading an optical information storage medium ~~according to~~as claimed in claim 1, the method comprising the steps of:

- emitting an electromagnetic radiation towards the optical information storage medium,
- detecting a phase or intensity modulation in electromagnetic radiation reflected from the optical information storage medium in response to the incoming electromagnetic radiation,

so that a pattern of alloy inclusions in the as-deposited information layer is provided by the detected phase or intensity modulation.